



## Abstracts

## Intracellular signaling pathways

**Program/Abstract # 323****Participation of dp115 in cell growth in *Drosophila***

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**Objective:** dp115 has been described as a vesicle tethering protein with a role in the dynamics of the secretory route. Our evidence points that this protein has an additional role in organ and cell growth and could be related with insulin/TOR kinase pathway, which stimulates cell growth and proliferation. **Methods:** An UAS-RNAi construction against dp115 (dp115i) was expressed using the GAL4/UAS system. Utilizing semi-quantitative RT-PCR and immunoblot using an antibody against dp115 we determined the efficiency, in terms of transcript stability and protein expression, of the dp115 RNAi construct. Analyzing adult phenotypes and using confocal microscopy of imaginal discs and larval tissues, we characterized the macroscopic and cellular effects of dp115 reduction of function conditions. **Results:** dp115i efficiently reduces transcript and protein levels. Induction in the eye-antenna discs produces flies with an evident increment in the size of the head, however without major defects on patterning processes. The increment in head size is mainly due to an augmentation in cell size, this phenocopies loss of function conditions in negative regulators of Ins/TOR pathway (e.g. dPTEN and Tsc1/2). Larval induction of dp115i expression produces melanotic tumors (similar to LOF of Tsc1 in larvae). Yeast double hybrid experiments show an interaction between dp115 and Tsc1 (BioGrid), suggesting a possible mechanism for dp115 function in TOR activation. **Conclusions:** Our results suggest that dp115 modulates cell growth probably regulating Ins/TOR pathway. Ongoing biochemical and epistasis experiments will address the point at which this protein modulates the activity of this pathway. (Acknowledgements: ICM P06-039F)

doi:[10.1016/j.ydbio.2009.05.352](https://doi.org/10.1016/j.ydbio.2009.05.352)**Program/Abstract # 324****Withdrawn**doi:[10.1016/j.ydbio.2009.05.353](https://doi.org/10.1016/j.ydbio.2009.05.353)**Program/Abstract # 325****Sestrin, a novel regulator of TOR-dependent cell growth and metabolism**Jun Hee Lee<sup>a</sup>, Andrei V. Budanov<sup>a</sup>, Ethan Bier<sup>b</sup>, Michael Karin<sup>a,b</sup>

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doi:[10.1016/j.ydbio.2009.05.354](https://doi.org/10.1016/j.ydbio.2009.05.354)**Program/Abstract # 326****A dsRNA based suppressor/enhancer screen for novel kinases involved in *Drosophila* Hedgehog signaling**

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As a key mediator of embryonic development, the Hedgehog morphogen acts in a signaling gradient to specify the fates of nearby cells. In normal mammalian development the Hedgehog gradient is necessary for patterning of many tissues including the neural tube and appendages. However in adults, aberrant Hedgehog signaling is involved in a variety of cancers including basal cell carcinomas and medulloblastomas. While much is known about Hedgehog signaling from work done in *Drosophila* as well as mouse and other models, many gaps of understanding in the pathway still remain. Using the *Drosophila* wing as a model for Hedgehog signaling we performed an RNAi based suppressor/enhancer screen in a *fu*<sup>1</sup> sensitized genetic background looking for novel kinases involved in the Hedgehog pathway. We have obtained fly lines from the Vienna *Drosophila* RNAi Center as well as National Institute of Genetics for 200 of the 245 predicted *Drosophila* kinases. Using the MS1096-Gal4 driver in the Gal4-UAS system, individual kinases were knocked down in the fly wing and we assessed the effect on the distance between the 3rd and 4th wing vein, which is directly patterned by Hedgehog signaling. Our screen identified 7 novel suppressors of the *fu*<sup>1</sup> phenotype as well as 7 strong enhancers and 9 weak enhancers. All strong candidates are being followed up with antibody stains to assay specific molecular effects on the Hedgehog pathway and will be verified with a bona fide genetic mutation. A larger scale screen using RNAi lines currently available from the National Institute of Genetics is being pursued.

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